

Amendments to the Claims:

The listing of claims will replace all prior versions, and listings, of claims in the application.

5 **Listing of Claims:**

Claims 10-25 (Canceled)

Claim 26 (New): A voltage-controlled oscillator (VCO), comprising:

- 10 a plurality of series-coupled voltage control delay lines (VCDL) for outputting a plurality of oscillating signals according to a voltage control signal, wherein each of the VCDL has a delay time corresponding to the voltage control signal;
a multiplexer, coupled to the VCDL, for selecting one of the oscillating signals to be a output oscillating clock according to a control signal;
15 a detector, coupled to the multiplexer, for outputting a detecting signal according to the output oscillating clock and a predetermined frequency; and
a controller, coupled between the multiplexer and the detector, for determining the control signal according to the detecting signal;
wherein the multiplexer, the detector and the controller are formed as a close loop for
20 determining the output oscillating clock from one of the oscillating signals.

- Claim 27 (New): The VCO of claim 26, wherein each of the voltage control delay lines comprises a control terminal for receiving the voltage control signal, an input terminal coupled to the previous voltage control delay line, and an output terminal coupled to
25 the next voltage control delay line.

Claim 28 (New): The VCO of claim 26, wherein the central frequency of the VCO is corresponding to delay time of each of the VCDL.

Claim 29 (New): The VCO of claim 26, wherein the VCO gain is corresponding to the control signal generated by controller.

5 Claim 30 (New): The VCO of claim 26, wherein the VCO is applied in a phase-locked loop (PLL).

Claim 31 (New): The VCO of claim 30, wherein the phase-locked loop (PLL) further comprises a phase detector, a charge pump, and a loop filter.

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Claim 32 (New): The VCO of claim 26, wherein the predetermined frequency is corresponding to the voltage control signal.

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Claim 33 (New): The VCO of claim 26, wherein the control signal is corresponding to the predetermined frequency and the voltage control signal.

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Claim 34 (New): The VCO of claim 26, wherein the multiplexer is controlled by the control signal output from the controller such that a central frequency of the VCO is provided for relative independence of process variation.

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Claim 35 (New): The VCO of claim 26, wherein the control signal is corresponding to the predetermined frequency and the voltage control signal.

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Claim 36 (New): A method of outputting an output clock of a voltage-controlled oscillator (VCO), the method comprising:
generating a plurality of oscillating signals according to a voltage control signal by a plurality of series-coupled voltage control delay lines (VCDL);
selecting one of the oscillating signals to be the output clock according to a control

signal by a multiplexer.

generating a detecting signal by detecting the frequency of the output clock by a
detector; and

determining the control signal according to the detecting signal by a controller;

5 wherein the multiplexer, the detector and the controller are formed as a close loop for
determining the output clock from one of the oscillating signals.

Claim 37 (New): The method of claim 36, wherein the detecting signal is corresponding
to a predetermined frequency.

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Claim 38 (New): The method of claim 37, wherein the control signal is corresponding to
the predetermined frequency and the voltage control signal.

Claim 39 (New): The method of claim 37, wherein the predetermined frequency is
15 corresponding to the voltage control signal.

Claim 40 (New): The method of claim 36, wherein the central frequency of the VCO is
corresponding to delay time of each of the VCDL.

20 Claim 41 (New): The method of claim 36, wherein the VCO is applied in a phase-locked
loop (PLL).

Claim 42 (New): The method of claim 36, wherein the multiplexer is controlled by the
control signal output from the controller such that a central frequency of the VCO is
25 provided for relative independence of process variation.